

## A SECTORAL APPROACH TO ADDRESSING INTERNATIONAL AVIATION EMISSIONS

DISCUSSION NOTE 2.0 09 JUNE 2009

### EXECUTIVE SUMMARY

International aviation emissions should be included in a post-Kyoto global climate change agreement. The Aviation Global Deal (AGD) Group's proposal recommends that all airlines be treated equally in an economically efficient and environmentally effective global carbon cap and trade mechanism. Auctioning a percentage of the carbon allowances is proposed to create revenue for climate change initiatives in the developing world in order to satisfy the UN requirement for 'common but differentiated responsibility' amongst countries.

#### KEY POINTS

- A global sectoral agreement covering CO<sub>2</sub> emissions from all international civil air transport providers from 2013 is proposed, ensuring equal treatment in international aviation markets and common but differentiated responsibilities among countries.
- A global emissions reduction target is set for the sector to ensure it plays a fair and equitable part in addressing global emissions reductions. Scenarios relative to 2005 emissions of 0% growth, a 5% reduction and a 20% reduction by 2020 are considered under the proposed AGD framework.
- A long term target to reduce net CO<sub>2</sub> emissions by between 50% and 80% by 2050 compared to 2005 is also suggested in anticipation of technological advances and sufficiently broad and deep global carbon markets developing.
- The aviation agreement is integrated within the overall climate framework with open access to global carbon markets. An international body of the UN administers the system.
- Individual air carriers surrender allowances in proportion to the carbon content of their annual fuel purchases. Allowances can be obtained free of charge through a benchmark distribution, from auctioning, from UN-based flexibility mechanisms, and potentially from 'REDD' forestry credit markets.
- Revenue generated from the auctioning of CO<sub>2</sub> allowances is collected by the UN administering authority and used for climate change initiatives in developing countries. This provides an innovative means of satisfying the UNFCCC requirement for achieving 'common but differentiated responsibility' for addressing climate change amongst countries.
- Auction revenue is hypothecated to clearly defined and transparent uses that deliver real environmental benefits through low-carbon solutions and are not treated as general revenue by national governments. Revenue uses would include:
  - Climate change adaptation, through internationally recognised institutions such as the Kyoto Protocol's Adaptation Fund,
  - Seed funding for sustainable biofuel feedstock cultivation and biojet refining capability in developing countries,
  - Avoided deforestation initiatives including capacity building, measurement and reporting through an international funding mechanism to co-ordinate efforts to slow deforestation,
  - A contestable fund for financing research and development of innovative technology solutions for aviation.
- Scenarios considered under the proposed AGD framework identify average annual revenues of \$1.5 – 5.0 billion USD depending on emissions targets and level of auctioning.

## INTRODUCTION

- 1 In December this year, governments will meet in Copenhagen to negotiate and agree what must be an ambitious, equitable and effective global deal to address climate change. The Aviation Global Deal (AGD) Group believes that CO<sub>2</sub> emissions from international aviation must be integrated within this agreement at a sectoral level and this discussion note describes how this can be achieved.
- 2 The AGD Group is a coalition that brings together leading international airlines, aviation sector companies and international NGO The Climate Group. Its purpose is to help contribute towards a pragmatic, fair and environmentally effective global policy solution for addressing CO<sub>2</sub> emissions from international aviation. In particular, it seeks to support policy discussions within the International Civil Aviation Organisation (ICAO) as it prepares for the UN climate change negotiations in Copenhagen in December 2009.
- 3 The AGD Group recognises the need to find a global solution to our emissions that meets environmental and developmental needs whilst ensuring a level playing field in our markets. A global sectoral approach must cover all CO<sub>2</sub> emissions from international aviation, and should also be readily applicable to domestic aviation emissions. We underscore the need for our industry to continue to have the capacity to invest in the sector's key emissions reduction drivers, namely fleet replacement, infrastructure improvement and sustainable biofuels.
- 4 We support the leadership of the International Civil Aviation Organisation through its Group on International Aviation and Climate Change (GIACC) in developing a sectoral approach to managing international aviation emissions. We will work with the International Air Transport Association (IATA), regional industry groups, Governments and other key stakeholders in helping to develop an appropriate solution.
- 5 This paper expands upon our original discussion note circulated to stakeholders in mid-March. Both papers are built on the AGD Group's 'Key Principles' communiqué released in February 2009, which identified the basis of any global sectoral approach for aviation.

## PRINCIPLES FOR A GLOBAL SECTORAL APPROACH

- 6 **Environmental integrity** – A successful solution must reduce international aviation’s net CO<sub>2</sub> emissions<sup>1</sup> in line with scientifically determined targets. Achieving these targets will require a multi-faceted approach, including continued investment in technology, sustainable biofuels, improvements in infrastructure and operational efficiency enhancements as well as the use of cost-effective economic measures, including carbon trading, flexibility mechanism credits and potentially credits from reducing emissions from deforestation and forest degradation in developing countries (REDD). The policy approach must not create ‘carbon leakage’ where emissions continue, but markets are distorted.
- 7 **A global policy** – Policy measures to deal with aviation's contribution to climate change must be developed at a global sectoral level covering all emissions from international aviation, to avoid competitive distortion and avoid creating a patchwork of conflicting and potentially overlapping national and regional policies. Under a sectoral approach, aviation emissions are treated as an indivisible sector total and not apportioned to individual states.
- 8 **Non-duplicative policy** – Airlines should only be charged once for their emissions wherever they occur. A global approach must replace any national or regional policy mechanisms that impact on international aviation, such as the EU ETS or taxes and charges imposed for ostensibly climate change mitigation reasons, to ensure there is no layering and double counting of aviation emissions policy. The approach should be readily applicable to domestic aviation emissions.
- 9 **Continued competitiveness between airlines** – Airlines must face equal treatment in any given origin-destination market regardless of routing, intermediate journey points or operator nationality, in keeping with the spirit of the non-discrimination embodied in Article 11 of the Chicago Convention. A global sectoral approach is the best way of ensuring this.
- 10 **Equity between countries** – At the same time as it delivers equal treatment between airlines; any agreement must also respect the UNFCCC principle of common but differentiated responsibilities (CBDR) amongst countries. Achieving this will require enlightened political leadership and a willingness to consider innovative solutions.
- 11 **Cost-effective economic measures** – Aviation must be integrated within the overall climate framework with open access to cost-effective market-based instruments including carbon trading, flexibility mechanism credits and potentially credits from ‘REDD’ forestry credit markets. Any economic measures applied to aviation under a global sectoral approach must offer the greatest environmental benefit while simultaneously providing the most cost-effective outcome for the industry.
- 12 **Revenue hypothecation** – Any revenues from the economic measures under a global scheme to address aviation emissions should be clearly earmarked for environmental purposes, and not treated as general revenue by national Governments.
- 13 **Operational capability** – The system must be simple, universally applicable and straightforward to implement. Compliance by both States and operators must be enforceable through an appropriate legal structure.

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<sup>1</sup> Net emission targets ensure that the aviation industry can continue to grow sustainably by requiring that any CO<sub>2</sub> emitted above the sector’s target must be matched by emission reductions paid for by aviation in other sectors.

- 14 **Consistent & proportional** – Any regime for aviation emissions must be consistent with, and in proportion to, aviation’s contribution to the overall level of emissions reductions in the broader international climate change policy framework.
- 15 **Incentivising technology investments** – The approach should incentivise airlines to acquire more fuel-efficient aircraft and to purchase low carbon jet fuels; fuels that offer net carbon reductions over their full life cycle, and ensure that airlines receive credits for the related CO<sub>2</sub> benefits.
- 16 **Scientifically based** – The framework should cover only the CO<sub>2</sub> emissions from aircraft, consistent with ICAO’s recommendation, recognising both the uncertainty in scientific knowledge and the difficulties in characterising the non-CO<sub>2</sub> climate effects of aircraft at altitude. However, effective policy to address non-CO<sub>2</sub> climate effects should be developed and implemented when there is a clear scientific basis for doing so.
- 17 **Sustainable aviation sector** – The eventual solution needs to balance the contribution made by a sustainable, competitive and healthy aviation sector to the global economy with the urgent challenge of combating climate change.

## KEY CONSIDERATIONS FOR AVIATION

### A GLOBAL APPROACH: THE NEED FOR EQUAL TREATMENT

- 18 A multilateral global sectoral approach is essential for the international aviation sector.
- 19 International aviation does not fit into the traditional geographical definitions applied to ground based industries. Its business is carried out in international airspace and across national borders, connecting people and businesses between countries of all levels of development. Unilateral, regional, or indeed any type of differential policy initiative is ill-suited to this international industry.
- 20 Under the Kyoto Protocol, emissions from international air transport were not included in national inventories or national emissions reduction targets because of the difficulty in allocating them to specific countries. It continues to be the case that country-by-country allocation, differentiation and policy selection are unsuitable for international aviation.
- 21 From an environmental perspective, differential measures can create perverse incentives that lead to carbon leakage and undermine environmental objectives. From a business perspective they create competitive distortion as described in Box 1 below. An uncoordinated patchwork of overlapping and contradictory policies will worsen distortions and create administrative complexity that must be avoided.
- 22 A comprehensive multilateral global sectoral approach can avoid the problems of country-by-country treatment. However, sectoral approaches do not automatically preclude competitive distortion and steps must be taken to ensure such unintended consequences do not occur. As described in Box 1, climate change policy must be equal for all carriers in any given origin-destination market and for any operator in that market regardless of routing, intermediate journey points or operator nationality.
- 23 Layering of legislation will compound the risk of competitive distortion. Airlines should only be charged once for their emissions wherever they occur. A global, sectoral approach should replace any national or regional climate change policy mechanisms applied to international aviation emissions such as the EU-ETS or charges imposed for climate change mitigation reasons.

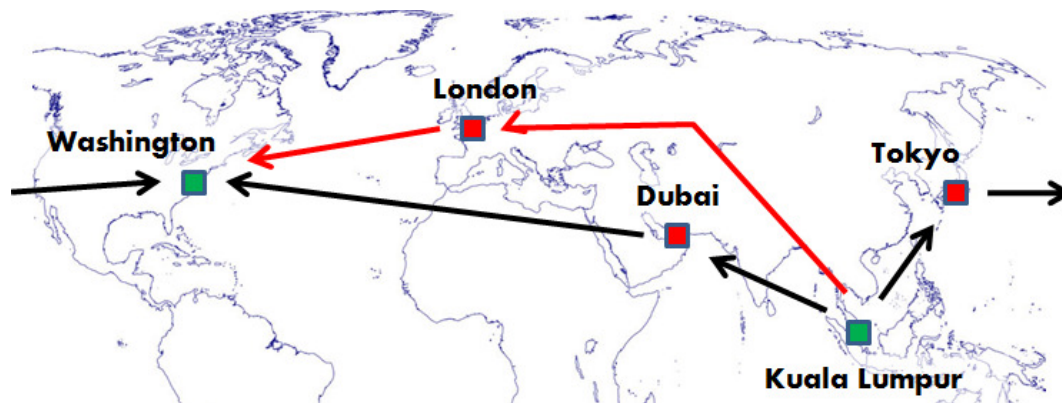
### DELIVERING COMMON BUT DIFFERENTIATED RESPONSIBILITY (CBDR)

- 24 Any solution for international aviation must reconcile the need for equal treatment amongst *airlines*, with the UNFCCC principle of common but differentiated responsibilities amongst *countries*.
- 25 Within the broader international climate negotiations, developing countries have legitimately argued that developed countries have a responsibility for leading efforts to address climate change, as they have reaped the economic benefit of carbon-intensive activities for many more years than newly industrialising countries. Conventionally, this has meant that developed countries, and by extension their industries, have been required to adopt and implement more ambitious climate policies than their developing country counterparts. However, because of the unique characteristics of international aviation described above, the traditional interpretation of CBDR needs to be re-examined for the aviation sector if emissions from international aviation are to be effectively and equitably addressed.
- 26 Such reinterpretation requires fresh thinking, a willingness to consider innovative solutions and above all political leadership. This does not mean a derogation of the traditional CBDR principle within the wider negotiations, nor does it lessen the obligation of developed countries to lead global climate change efforts.

27 The AGD approach to resolving the dilemma reflects a business perspective on what is necessary to deliver a fair and equitable outcome, informed by an understanding of the political realities of the broader climate change negotiations. Very simply, the AGD approach *treats all international airlines equally* through mandatory participation in a global aviation emissions trading scheme (ETS), *but creates differential treatment of countries* through the allocation of ETS revenues to climate change initiatives in developing countries.

**Box 1: Carbon leakage and competitive distortion in international aviation markets due to asymmetric climate policy costs**

In most air transport markets, a journey can be made from origin to destination by a range of routing options, both direct and indirect. The diagram below illustrates the market for air services with origin Kuala Lumpur and destination Washington where there are no direct services.



When aviation climate policies are applied to some, but not all flight stages, this will lead to carbon leakage and competitive distortion. Carbon leakage occurs when passengers shift to carriers that can service the same market but avoid most or all of the costs associated with the policy. The policy fails to reduce emissions since they simply occur elsewhere.

For example, consider a climate policy that is only applied to flights arriving and departing Europe. This policy will apply to the flight stages Kuala Lumpur-to-London and London-to-Washington, but not to the other flight stages. Costs in this market are asymmetric and carbon leakage will occur.

Airlines from developing countries compete equally with their counterparts from developed countries in international passenger and cargo markets, therefore climate change policy must be equal for all carriers in any given origin-destination market regardless of routing, intermediate journey points or operator nationality.

## PROPOSED FRAMEWORK

### OVERVIEW

- 28 The framework proposed is a global sectoral agreement based on an open emissions trading scheme, fully linked to global carbon markets, and integrated within a broader UN ‘Copenhagen Agreement’. The following points summarise how the agreement would work:
- Effectively, international aviation is treated as a separate ‘country’, with its own allocation of emission allowances, or aviation Assigned Amounts Units (AAUs) in UNFCCC terms.
  - Based on recommendations from ICAO, UNFCCC negotiators would set overall and binding CO2 emissions targets for the sector for a given period (e.g. 2013-2020) as part of a wider post-2012 climate treaty.
  - A central UN administrative body (either existing or new) would allocate emission allowances directly to individual airlines through both auctioning and free allocation.
  - Airlines would be required to submit one emission allowance unit (equivalent to 1 tCO2) to the administrative body for every tonne of CO2 emitted.
  - An airline’s total international CO2 emissions would be based on the carbon content of fuel purchased.
  - To incentivise the use of sustainably produced biofuels, their lifecycle carbon footprint would be used, once internationally recognised lifecycle carbon modelling and sustainability standards have been implemented.
  - A carbon trading system would be established for aviation, fully linked to global carbon markets, to enable airlines to purchase emission allowances from other sectors, allowing aviation to cost effectively meet the target set by the UNFCCC.
  - Auction revenues, collected by the administrative body, would be used for climate change initiatives in developing countries as an innovative means of satisfying the UNFCCC requirement for ‘common but differentiated responsibility’ for addressing climate change amongst countries.
  - A proportion of auction revenues would also be set aside as a contestable fund to support innovative low-carbon technology research and development programmes aimed at accelerating the pace of environmental improvement within the aviation industry.
- 29 Figure 1 below provides a schematic representation of the AGD’s proposal.

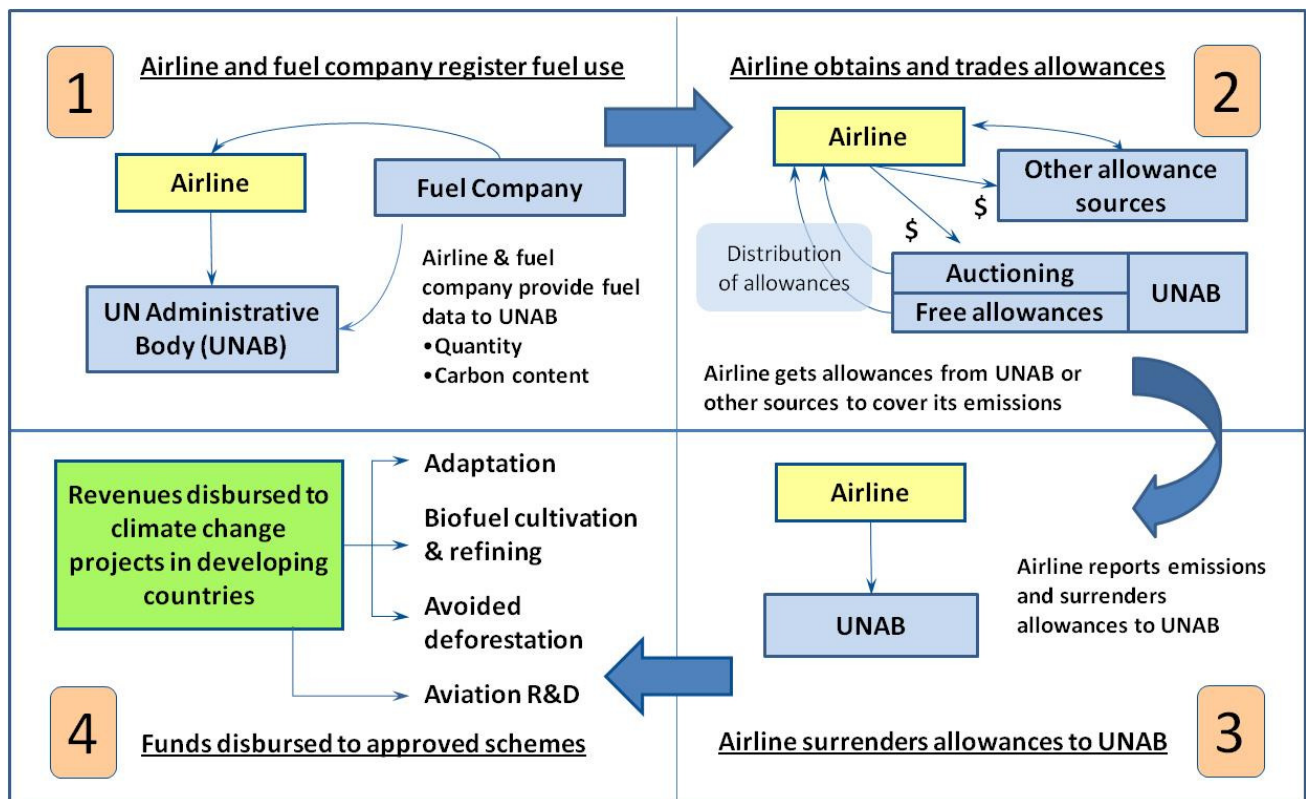


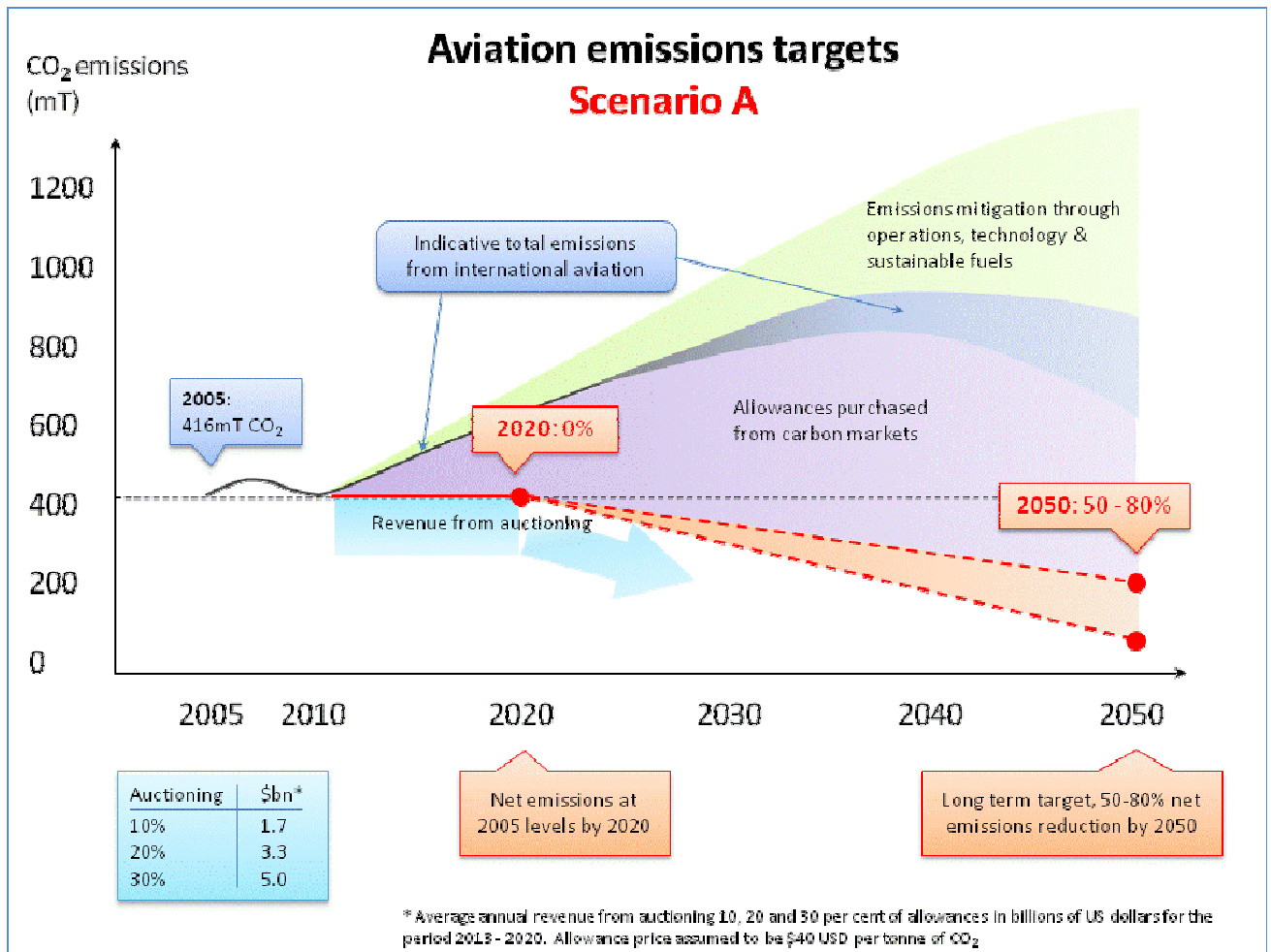
Figure 1: Illustrative steps in the AGD proposed framework

### SECTORAL EMISSIONS TARGETS

- 30 ICAO would propose to the UNFCCC a global net emission reduction target for international aviation as an integral part of the wider Copenhagen Agreement.
- 31 Three scenarios are presented here to illustrate potential targets for the sector over the medium term. Target scenarios represent 0% growth (i.e. carbon neutral growth), a 5% reduction, and a 20% reduction in emissions for achievement in 2020 based on a 2005 emissions reference year (see figure 2).
- 32 A long-term target to reduce net CO<sub>2</sub> emissions by between 50 and 80% by 2050 compared to 2005 is also suggested, in anticipation of technological advances and sufficiently broad and deep global carbon markets developing.
- 33 Each scenario illustrates an emissions target profile between 2013 and 2050. The highest curve, coloured green, represents potential future emissions by projecting forward historic improvements in fuel efficiency. The 'Indicative total emissions' curve illustrates where international aviation emissions are expected to be following mitigation measures within the sector, from enhanced operational and technological improvements and sustainable fuels. Below this, the purple area illustrates the emissions which cannot be cost effectively reduced within the sector and will need to be purchased from carbon markets in order to meet the sector emissions target.
- 34 In each scenario, the sector emissions target is represented by a red curve. Airlines would be required to surrender allowances for all of the emissions between the x-axis and the total emissions curve. Some of the allowances would be made available through auction, shown as a blue area. Each scenario presents

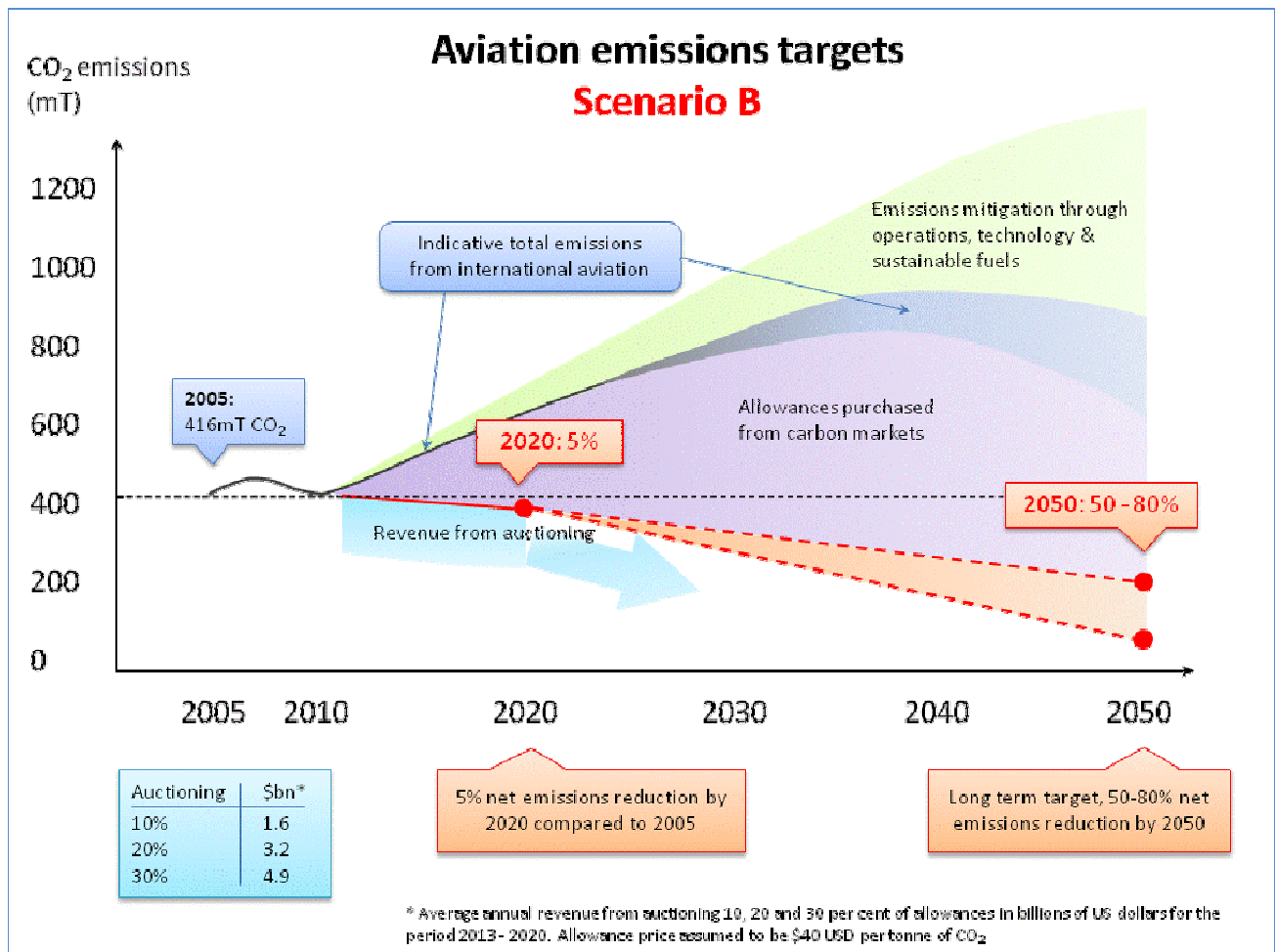
revenues for 10, 20 and 30% of auctioning in the lower left corner based on a \$40/tCO<sub>2</sub> carbon price. Note that the 'dip' around 2010 reflects the impact of the current global recession.

- 35 The AGD Group would welcome feedback from stakeholders on the scenarios presented here; taking into account the three net CO<sub>2</sub> scenario targets and the potential revenues generated for climate change initiatives in developing countries through the auction of a proportion of aviation's allowances.



**Figure 2a:** Aviation emissions targets, Scenario A

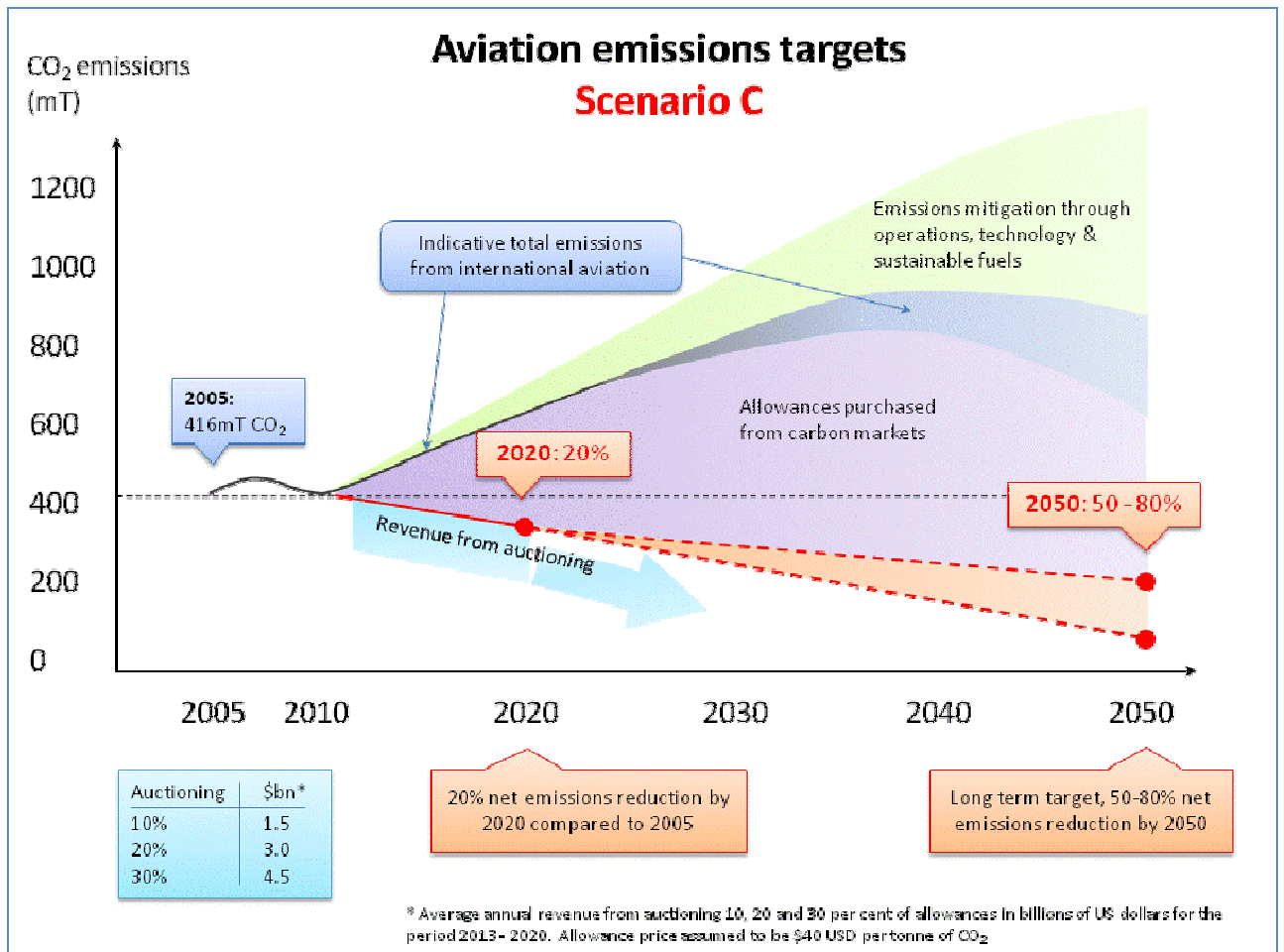
Scenario A depicts a target pathway for net emissions from international aviation emissions to return to 2005 levels by 2020. A long-term declining target pathway to achieve between 50 and 80% net emissions reductions by 2050 is also illustrated.



**Figure 2b:** Aviation emissions targets, Scenario B

Scenario B depicts a declining target pathway to achieve a 5% reduction in net emissions from international aviation emissions by 2020 relative to 2005. A long-term declining target pathway to achieve between 50 and 80% net emissions reductions by 2050 is also illustrated.

- 36 These scenarios are indicative only, but usefully illustrate the magnitude of projected emissions growth and the auction revenue flows that could be generated by the proposed AGD policy framework. No attempt has been made to estimate the impact on ticket prices or airline profitability. However, because the proposed framework is global (and hence has scale) and employs open emissions trading, it is reasonable to assume that the approach represents the most cost-effective means for achieving effective emission reduction in the sector.
- 37 Scenarios were chosen as representative of different government, industry, and other stakeholder views. The carbon neutral scenario for example, is in line with wider industry aspirations for the medium term; the 5% reduction is similar to the target set for aviation in the EU-ETS between 2012 and 2020; and the 20% reduction is comparable with the broader emission targets under consideration within the UNFCCC negotiation process.



**Figure 2c:** Aviation emissions targets, Scenario C

Scenario C depicts a declining target pathway to achieve a 20% reduction in net emissions from international aviation emissions by 2020 relative to 2005. A long-term declining target pathway to achieve between 50 and 80% net emissions reductions by 2050 is also illustrated.

- 38 A key point illustrated by the diagrams is that regardless of the emission target chosen, industry demand for extra emission allowances will be substantial, even into the long term. This underscores the critical importance of establishing broad and deep international carbon markets to provide sufficient quantities of additional and affordable allowances. It also points to the need for accelerating the development and deployment of new, paradigm shifting technologies for the industry.

## KEY DESIGN FEATURES

### *Global sectoral agreement*

- 39 A global sectoral agreement integrated within a broader international climate change treaty. The framework would cover all international civil air transport providers, including air cargo and private jet operators, across all international air routes.

### *Determination of sector emission target*

- 40 Based on ICAO recommendations, UNFCCC negotiators would set a total binding CO<sub>2</sub> emission target for the sector in line with wider global emission reduction targets for an agreed commitment period, taking into account international aviation's high marginal abatement costs, and its overall contribution to global climate change.
- 41 Scenarios relative to 2005 emissions of 0% growth, a 5% reduction, and a 20% reduction by 2020 are considered under the proposed AGD framework and are presented here. A long-term target to reduce net CO<sub>2</sub> emissions by between 50 and 80% by 2050 compared to 2005 is also suggested in anticipation of technological advances and sufficiently broad and deep global carbon markets developing.

### *Allocation of aviation emissions*

- 42 Rather than dividing the sector's emissions amongst individual countries for incorporation in national inventories, the international aviation sector would effectively be treated as an additional 'country' under the UNFCCC, with its own sectoral allocation of emission allowances or Assigned Amount Units (AAUs) in UNFCCC terms.
- 43 An international administrative body (see below) would distribute the sector's total AAUs amongst individual airlines. A proportion would be allocated without charge based on a yet to be determined benchmarking approach, with the remainder allocated through auctioning. The exact proportion of free to auctioned allowances could be determined through ICAO or the UNFCCC negotiations. The AGD scenarios propose auctioning levels of 10, 20 and 30%. Airlines could also obtain other equivalent emission allowances (e.g. EUAs, CERs etc) through global carbon markets.
- 44 Should they wish, countries could choose to transfer their domestic aviation emission allowances into the international inventory. Domestic operators would then be subject to the same policy framework as international carriers.

### *UN administrative body*

- 45 A United Nations administrative body ('UNAB') would administer and operate the sectoral system with legal authority to enforce compliance. This could either be an existing UN body (e.g. an expanded and strengthened ICAO) or one especially established. To maximise cost-effectiveness, the body might also administer other sectoral agreements, for example, international maritime.
- 46 The UNAB would act as the sector's emissions registry and would be responsible for the free allocation and auctioning of allowances to individual airlines. The UNAB would also collect and disburse revenues generated from allowance auctions to transparent, internationally recognised institutions and initiatives supporting climate change activities in developing countries (see below). Monitoring, reporting and verification functions could also sit within the UNAB, with the option to subcontract these tasks to other bodies.

47 A number of the administrative functions of the UNAB could be assigned to existing institutions such as ICAO and the UNFCCC.

*Airline obligations*

48 Airlines would be the primary 'point of obligation' under the proposed framework and would have to account for their annual CO<sub>2</sub> emissions to the UNAB. Individual carriers would be required to surrender emission allowances in proportion to the carbon dioxide associated with the aviation fuel purchased for international flights. The number of allowances surrendered would be based on the quantity and carbon content of the fuel. For example, Jet A1 fuel has a carbon conversion factor of 3.15, so 100 tonnes of Jet A1 produces 315 tonnes of CO<sub>2</sub> when burnt; 315 tonnes-worth of allowances would therefore need to be surrendered.

49 In order to provide a dual data stream for the monitoring, reporting and verification process, suppliers of jet fuel would also submit receipts to the UNAB for fuel purchased.

50 Emission allowances for surrendering could be obtained from the following sources:

- The free allocation of aviation sector allowances by the UNAB
- The auction of aviation sector allowances by the UNAB
- UNFCCC-compliant emissions trading schemes such as the EU ETS and other regional schemes
- Flexibility mechanism credits such as those from the Clean Development (CDM) and Joint Implementation (JI) mechanisms
- UNFCCC-compliant credits from reducing emissions from deforestation and forest degradation in developing countries (REDD) as markets in these credits develop.

51 The cost of acquiring allowances would become a cost of doing business. The cost would reflect global marginal abatement costs rather than arbitrary values, as is the case with taxation.

*Incentivising the use of lower carbon fuels*

52 The approach would incentivise the use of sustainably produced biofuels through implementing internationally-recognised life-cycle carbon modelling and sustainability standards, as well as monitoring, reporting and verification procedures that would acknowledge their lower life-cycle carbon footprints. To avoid the unintended consequences associated with first generation biofuels only bio-derived fuels that satisfy the following criteria should be used:

- demonstrate significantly lower life-cycle carbon footprint than conventional jet fuel,
- do not cause deforestation or the loss of high-value ecosystems,
- do not compete with food production for land or freshwater,
- retain social and economic benefits in the communities in which they are produced,

53 Transporting biofuels long distances from where they were produced to major aviation hubs would counteract a significant proportion of the carbon savings enabled with their cultivation. Instead, they should be used at local aviation hubs wherever possible. To achieve this, a system could be established very similar to renewable electricity tariffs used in many countries, whereby airlines could agree to purchase a certain volume of fuel from sustainable sources as part of their contract with fuel suppliers. A volume of biofuel,

equivalent to the contracted amount, would be guaranteed to enter the aviation fuel supply chain somewhere in the world but would not necessarily be used by the contracting carrier. The carrier would, however, receive the benefit of any carbon savings associated with the cultivation of the fuels (e.g. a 50% saving compared with conventional jet fuel) and could include this in their carbon reporting at the end of a trading period.

#### *Emissions Trading*

- 54 In order to allow the industry to grow sustainably and cost-effectively, airlines would be able to buy extra emission allowances and sell surplus ones in international carbon markets (e.g. EU-ETS, CDM and JI credit markets). In effect this would allow airlines to offset any emissions above the sector's total AAU allocation by paying for equivalent emission reductions in other industries. Aviation sector emission allowances would be fully fungible with other UN-backed units (e.g. CERs, EUAs, ERUs etc).
- 55 Due to the high mitigation cost within the sector and continued expected growth into the foreseeable future, airlines would likely be active participants in international carbon markets. Demand for extra emission allowances from aviation would directly benefit many developing countries, as much of the demand generated by aviation will need to be met through CDM or future CDM-type credits.

#### *Hypothecation of auction revenues*

- 56 Revenue generated from the auction of CO<sub>2</sub> allowances would be collected by the UNAB and then distributed through relevant expert international bodies or funds (e.g. the GEF, UNEP, World Bank etc) to support climate change initiatives in developing countries. The International Oil Pollution Compensation (IOPC) Funds provide a precedent for this type of international hypothecation.
- 57 Scenarios under consideration by AGD identify average annual revenues of \$1.5 – 5.1 billion depending on emissions targets and level of auctioning.
- 58 As a minimum, this revenue should be used to deliver real environmental and development benefits that directly address the causes or impact of climate change and not treated as general revenue by governments. Enshrining the principle of hypothecation within a global approach to aviation emissions auctioning offers a guarantee to developing countries that the revenues from such a scheme would be secure and would not fluctuate depending on national priorities.
- 59 Revenue should be hypothecated to a set of clearly defined and transparent uses, including:
- Climate change adaptation projects and programmes supported by Kyoto Protocol's Adaptation Fund,
  - Seed funding for sustainable biofuel feedstock cultivation and biojet refining capability in developing countries
  - Avoided deforestation capacity building, through an international funding mechanism to co-ordinate efforts to slow deforestation (see See Box 2),
  - Some of the auction revenue should also be used for a contestable R&D fund to finance innovative, and paradigm shifting, low-carbon technologies for aviation.

### Box 2. Aviation & REDD: A natural synergy

Reducing Emissions from Deforestation and Forest Degradation (REDD) in developing countries is widely regarded as the fastest and most cost-effective means of achieving substantial global emission reductions in the short to medium term. Making these reductions at scale will require sufficient and reliable finance. A new Global Deal on climate change is likely to include a REDD mechanism, and there is huge scope to cut forest emissions even before that comes into effect, but the critical issue of funding must first be resolved.

The policy framework proposed by the AGD Group offers an elegant solution to this problem by providing a steady stream of annual funding to a credible, international REDD fund that will eventually fold into a UNFCCC mechanism. A number of initiatives have been established or proposed to fund institutional capacity building and other issues within rainforest countries to ensure that deforestation and degradation can be effectively addressed at source.

#### *CO<sub>2</sub> emissions only*

- 60 The framework would cover only the CO<sub>2</sub> emissions from aircraft, consistent with ICAO's recommendation, recognising both the uncertainty in scientific knowledge and the difficulties in characterising the non-CO<sub>2</sub> climate effects of aircraft at altitude. However, effective policy to address non-CO<sub>2</sub> climate effects should be developed once there is a clear scientific basis for doing so.

## BENEFITS OF PROPOSED FRAMEWORK

- 61 The proposed framework delivers a number of beneficial outcomes for the environment, countries and international air transport carriers.
- 62 **Environmental integrity ensured** - As long as all international carriers are treated equally under the framework the potential for carbon leakage is minimised. In addition, the alignment of the sectoral target with broader Copenhagen agreement targets ensures international aviation plays a fair and equitable part in addressing global emission reductions.
- 63 **Market competitiveness maintained** - Equal treatment of all international airlines in origin-destination markets ensures that the existing level of competitiveness is not adversely affected.
- 64 **Common but differentiated responsibility achieved** - The use of allowance auctioning revenues for climate change projects in developing countries provides an innovative solution for reconciling the need to differentiate between countries, while at the same time maintaining equal treatment amongst airlines.
- 65 **Straightforward design delivered** - The framework provides a straightforward design that is relatively easy to implement and administer. The design minimises the creation of perverse incentives for airlines and allows for accurate monitoring, reporting and verification of data. The AGD Group proposal avoids a plethora of overlapping and contradictory schemes.
- 66 **Fair and transparent system established** - The creation of an independent administering authority ensures the transparent collection and allocation of auctioning revenues. Revenue streams would be independent of national treasuries.
- 67 **Reliable, independent revenue streams generated** - The auctioning of a proportion of the emission allowances by the administering authority creates a reliable and independent stream of revenue for developing country climate change needs. In addition, the sector's expected demand for extra emission allowances will create revenue flows through carbon markets, directly benefiting developing countries through increased demand for CDM credits.

## RECOMMENDATIONS AND CONCLUSION

### POSSIBLE COPENHAGEN TEXT

- 68 The AGD Group believes it is vital that countries agree to text at Copenhagen as part of a new post-2012 climate treaty that provides the necessary policy and negotiation space to develop and implement a new framework for addressing international aviation emissions, along the lines proposed in this paper, before the end of 2012.
- 69 The text should mandate the need for a global sectoral solution which treats all airlines equally; set an emission target for the sector for the next commitment period; and request all Parties to work through ICAO to develop the necessary sectoral agreement in time for its implementation from 01 January 2013.
- 70 The AGD Group recommends the following text as one possible formulation:
- x. Parties shall pursue limitation or reduction of GHG emissions from aviation bunker fuels not controlled by the Montreal Protocol, working through the International Civil Aviation Organisation.*
- y. Parties request ICAO to develop and present to the COP no later than COP 16 a proposal for a global sectoral agreement for aviation bunkers, which ensures that net CO<sub>2</sub> emissions from the sector for the commitment period 2013-2020 are [limited to 2005 levels from 2013 to 2020][reduced to 5% below 2005 levels by 2020][reduced to 20% below 2005 levels by 2020]. The agreement should ensure equal treatment of all airlines and should not lead to competitive distortions or carbon leakage.*
- 71 To ensure the proposed framework is effective and delivers the benefits outlined earlier it will be necessary for policymakers to agree to:
- Use of open emissions trading
  - Full hypothecation of auctioned revenue to appropriate and transparent international funds
  - Continued development of a broad and deep global carbon market
  - Creation of new responsibilities for administering international aviation, either through existing or new UN institution(s)

### CONCLUSION

- 72 In summary, based on the principles and framework laid out above, the AGD Group urges the International Civil Aviation Organisation (ICAO) and United Nations Framework Convention on Climate Change (UNFCCC) to accelerate the development of a global sectoral solution for international aviation. We look forward to continuing to contribute to this process, working with committed and ambitious stakeholders.

